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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,716	04/13/2001	Yuri Ton	00/21144	4965

7590 12/22/2004

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EXAMINER

NGUYEN, SON T

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,716

Applicant(s)

TON ET AL.

Examiner

Son T. Nguyen

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9-19,21-29,31-46 and 48-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-19,21-29,31-46 and 48-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/5/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1,3-7,9-19,21-28** are rejected under 35 U.S.C. 102(b) as being anticipated by US 5764819 (herein 819).

For claim 1, 819 teaches a method of assessing the state of a field grown crop comprising: (a) collecting data pertaining to at least two different and distinct plant derived parameters (col. 8, lines 50-67, col. 10, lines 50-67) over a predetermined portion of the growth cycle of the crop, wherein said collecting is effected by at least two sensors (col. 10, line 25) positioned on a plant of the crop and whereas the crop is unharvested, and (b) analyzing said data (cols. 11-15, col. 18, lines 1-11) collected over said predetermined portion of the growth cycle to thereby identify at least two trends in said data over at least a portion of said growth cycle, said trends being indicative of the state of the crop; and (c) correlating said at least two trends to one another to thereby assess the state of the field grown crop (cols. 11-15, col. 18, lines 1-11).

For claim 3, 819 teaches the step of correlating said trends to at least one environmental parameter data (col. 12, lines 5-21) acquired prior to or during said predetermined portion of the growth cycle of the crop to thereby determine the state of the field grown crop.

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For claim 4, 819 teaches wherein said trends represents a positive change in a value of at least one of said at least two plant derived parameters, a negative change in said value of at least one of said at least two plant derived parameters, or no change in said value of at least one of said at least two plant derived parameters over said at least a portion of said predetermined portion of the growth cycle of the crop (cols. 11,13-15, and col. 12, lines 5-28).

For claim 5, 819 teaches the step of graphically representing said data pertaining to said at least two plant derived parameters over said predetermined portion of the growth cycle of the crop (col. 13, lines 1-25).

For claim 6, 819 teaches wherein said data pertaining to said at least two plant derived parameters are selected from the group consisting of leaf temperature data, flower temperature data, fruit surface temperature data, stem flux relative rate data, stem diameter variation data, fruit growth rate data, leaf CO₂ exchange data and stem elongation rate data (col. 10, line 50, col. 11, lines 65-67, col. 12, lines 1-28).

For claim 7, 819 teaches wherein said at least one environmental parameter data is selected from the group consisting of air humidity data, air temperature data, solar radiation data, a boundary diffusion layer resistance data, wind speed data, soil moisture data, and soil temperature data (col. 12, lines 8-21, col. 18, lines 5-11,52-65).

For claim 9, 819 teaches wherein said step of analyzing said data is effected by a processing unit (col. 11, lines 23-33).

For claim 10, in addition to the above already explained limitations, 819 teaches a user client in communication with the sensors (the computer has to be operated and

monitor by a user). In addition, in col. 10, lines 20-45, 819 teaches various sensors being employed to read different wavelengths so as to determine different plant parameters or traits. Therefore, each one of those sensors is distinct and different from one another so as to read different wavelengths to determine certain traits.

For claim 11, 819 teaches a communication network (cols. 11,16).

For claim 12, 819 teaches a display that comes with the computer (cols. 11,16).

For claim 13, see claims 11,12.

For claim 14, 819 teaches irrigation device (col. 21).

For claim 15, 819 teaches a method of assessing a state of a field grown crop comprising: (a) selecting a first unharvested plant, said first plant being representative of the crop; (b) collecting a first set of data pertaining to at least two different and distinct plant derived parameters of said first unharvested plant over a predetermined portion of the growth cycle of the crop; and (c) analyzing said first set of data collected over said predetermined portion of the growth cycle of the crop to thereby identify at least two trend: in said first set of data over at least a portion of said predetermined portion of the growth cycle of the crop, said trends being indicative of a state of said first unharvested plant and thus the state of the field grown crop; and (d) correlating said trends to one another to thereby assess the state of the field grown crop. See the above columns of claim 1. In addition, col. 17 discusses studying more than one plant on different plots of land.

For claim 16, as mentioned above, col. 17 teaches multiple plants in studies with same criteria and comparing the data (col. 18, lines 1-11 and throughout patent of 819).

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For claims 17 & 18, 819 teaches wherein said step of selecting said first unharvested plant is effected according to at least one selection criterion, wherein said at least one selection criterion is selected from the group consisting of height of a plant, number of leaves, number of fruits, number of flowers, fruit size, and number and length of shoots (col. 10, line 50, col. 11, lines 65-67, col. 12, lines 1-28, col. 13, lines 4-60).

For claim 19, same as above for claim 17 because 819 teaches more than one plant for study.

For claim 21, see claim 3.

For claim 22, see claim 4.

For claim 23, see claim 6.

For claim 24, see claim 7.

For claim 25, see col. 10, lines 20-25.

For claim 26, see col. 10, lines 20-25. Also applies to the second plant.

For claim 27, see claim 9.

For claim 28, 819 teaches a method of assessing the state of a field mown crop comprising: (a) co-cultivating a first plant with a crop of a second plant (col. 17, lines 35-67), said first plant being more sensitive to a change in at least one environmental factor or an infection by a pathogen than said second plant; and (b) monitoring at least one plant derived parameter associated with said first plant to thereby assess the state of the field grown crop. See all of col. 17.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 29,31-46,48-55** rejected under 35 U.S.C. 103(a) as being unpatentable over 819 (as above). Note, since these claims are pretty much repeats of the above discussed claims, only certain limitations that have not been addressed with be addressed herein.

For claims 29,37,42, & 55, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the method of 819 to a greenhouse grown crop, for such study is notoriously well known to be implemented for greenhouse crop just as well as field crop.

For claims 31-36,38-41,43-46,48-54, see the above for explanations.

5. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4638594 (herein 594). 594 teaches a method of assessing the state of a field grown crop comprising co-cultivating a first plant 10 with a crop of a second plant 10 (there are more than one trees in the method of 594, see col. 7, lines 1-20) and monitoring the plant (col. 1, lines 9-12 & col. 2, lines 11-37, col. 2, lines 38-53, col. 3, line 9, col. 5 & lines 57-48, col. 2, lines 28-31 & col. 5, lines 47-48, col. 2, lines 38-68, col. 3, lines 1-14 & col. 5, all lines). However, 594 are silent regarding the 1st plant being more sensitive to a change in environmental factor than the 2nd plant. It would have been obvious to

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one having ordinary skill in the art at the time the invention was made to select a 1st plant with more sensitivity to change in the environment than a 2nd plant in the method of 594, because it would be a wasteful and costly study on how environment affect plants if one was to select a perfect plant which is not prone to any environmental effect; thus, one would have to have a control plant and a sensitive plant.

Response to Arguments

6. Applicant's arguments with respect to claims 1,3-7,9-19,21-27,29,31-46,48-55 have been considered but are moot in view of the new ground(s) of rejection. Claim 28 will be addressed herein.

Applicants argued that co-cultivation is an art-recognized term used to describe the cultivation of different entities in close proximity; therefore, 594 does not teach co-cultivation because 594 teaches same plants cultivated in close proximity.

The Examiner has been working in the art for quite some time and to the Examiner's knowledge, co-cultivation does not take on the meaning of cultivating of different entities because co-cultivation is a very broad term which can mean both cultivating different or same entities in close proximity. In Applicants claim language of claim 28, the claim does not state that co-cultivating a first plant that is different species from a second plant.

819 is employed in the new rejection above to teach co-cultivating different plants in close proximity to each other so the claim limitation of claim 28 is still not patentable.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son T. Nguyen whose telephone number is 703-305-0765. The examiner can normally be reached on Mon-Thu from 10:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 703-308-2574. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Son T. Nguyen
Primary Examiner
Art Unit 3643

stn